

## WHAT IS CLAIMED IS:

1. A method of evaluating a piezoelectric field comprising the steps of:

5 measuring a first absorption spectrum of a sample by irradiating infrared light to said sample with a first angle;

measuring a second absorption spectrum of said sample by irradiating the infrared light to said sample with a second angle different from the first angle;

10 specifying a peak position of an absorption band having incident-angle dependent intensity based on the first absorption spectrum and the second absorption spectrum; and

15 obtaining the piezoelectric field strength based on an equation representing a relationship between the piezoelectric field and an electron energy level corresponding to the peak position of the absorption band.

2. The method according to claim 1, wherein the piezoelectric field is an electric field induced by a lattice-mismatch strain in a semiconductor heterojunction of said sample.

3. The method according to claim 1, wherein said step of measuring the first absorption spectrum includes:

25 measuring in advance a reference spectrum by changing wavelength of the infrared light within a predetermined

range;

irradiating the infrared light to said sample by changing the wavelength of the infrared light within the predetermined range; and

5 calculating the first absorption spectrum based on the infrared light which is transmitted through said sample.

4. The method according to claim 1, wherein said step of measuring the second absorption spectrum includes irradiating the infrared light with the second angle by  
10 rotating a turntable on which said sample is placed.

5. The method according to claim 4, wherein said step of measuring the second absorption spectrum includes:

detecting a deviation of an optical axis of the infrared light which is irradiated to said sample and  
15 transmitted through said sample;

correcting the deviation of the optical axis; and

calculating the second absorption spectrum based on the infrared light which is transmitted through said sample.

6. A method of evaluating a piezoelectric field  
20 comprising the steps of:

measuring a first absorption spectrum of a sample by irradiating infrared light to said sample;

measuring a second absorption spectrum of said sample by irradiating infrared light to said sample placed on a  
25 turntable, said turntable being vibrated with a

predetermined angular frequency;

specifying a peak position of an absorption band having incident-angle dependent intensity based on the first absorption spectrum and the second absorption spectrum; and

obtaining the piezoelectric field strength based on an equation representing a relationship between the piezoelectric field and an electron energy level corresponding to the peak position.